REGIONAL PLAN OF PREFERENTIAL FACILITIES FOR HIGH-OCCUPANCY VEHICLES

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Research and planning were undertaken to identify opportunities and potential demand for the development of preferential facilities for high-occupancy vehicles in Southern California. Preferential facilities include normal or contraflow preferential lanes on existing freeways; exclusive curb, median, contraflow, or reversible lanes on arterials; freeway ramp metering; and associated park-and-ride sites. The treatments were evaluated according to time and cost savings for bus and car-pool users; service deterioration of vehicles with low occupancy; highway agency benefits of capacity improvements and added costs; transit operator patronage, reliability benefits, and increased costs; and community benefits in vehicle mile (vehicle kilometer) and person-minute reductions. Additional objectives were to prepare a comprehensive plan and to supply guidelines for design implementation. A short-range demand forecasting procedure is described, focusing on travel market segmentation and time savings estimates. Results of an impact measurement procedure for a detailed preferential treatment are shown to support recommendations for pilot implementation of a total plan covering 28 service areas, 16 preferential lane treatments, and 485 additional buses.

•SOUTHERN California contains one of the largest and most comprehensive roadway networks ever developed to serve a single metropolitan area. The unprecedented regional accessibility is provided by a major roadway system of >400 miles (644 km) of multilane, limited-access roadways and over 2,000 miles (3220 km) of major six- and eight-lane arterial facilities. Unfortunately, less favorable aspects of the freeway system and of the heavy reliance on the automobile have become apparent in the past decade. Deterioration of air quality is the most obvious; traffic congestion, which once was confined to the approaches of downtown Los Angeles, is now recorded as far as 15 to 25 miles (24 to 40 km) from the central city on all major freeways.

The extensive network of freeways and continued urban expansion have also contributed to the decline in the quantity and quality of public transportation in the region. This decline is a result of the increasing difference between the convenience, comfort, and mobility provided by the automobile and the service levels offered by public transit. This difference becomes especially apparent in the more recent low-density, outlying suburban developments.

Recent federal requirements to improve air quality within Southern California and the experience with gasoline availability have produced an increased public awareness of the need to provide improved transit service. Recognizing the importance of an improved public transportation service, the California State Senate directed the Southern California Rapid Transit District (SCRTD) to develop, by March 1974, a comprehensive plan for the development and operation of preferential facilities for high-occupancy vehicles on the major freeways and arterials in its service area.

The major task of the program was to develop a plan that would enable transit to compete with the automobile in terms of convenience and accessibility and thus encourage transit use. Where feasible, car pools were to be accommodated to encourage an increase in the average occupancy level of commuter automobiles during the peak traffic periods. Major objectives of the study were to

1. Determine the corridors where potential demand for bus and car-pool travel would justify preferential service.
2. Identify opportunities for treatment of existing facilities that would produce significant bus service improvements for current or potential users and that are within the resource capabilities of the agencies that must participate in their implementation.
3. Evaluate the corridors and preferential treatments in relation to the travel impact, costs, and time required to implement the facilities, considering the value that the user, the bus operator, the traffic operations agencies, and the community will gain.
4. Delineate a program for the location and type of preferential service facilities to be implemented.
5. Supply design guidelines and operational procedures for operating buses or car pools on each of the facilities included in the plan.

The types of techniques and criteria for preferential treatments on freeways and arterials were developed from previous preferential applications and research, which therefore served to provide a realistic approach to the improved efficiency of bus transit in Los Angeles.

PREFERENTIAL TECHNIQUES AND CRITERIA

Priority treatments for high-occupancy vehicles have been increasingly implemented throughout the world, and the types of treatment, the number of people they serve, and the design details they use vary widely. The treatments are grouped in three categories: those that relate to freeways, to arterials, and to terminals. Techniques and criteria for application of preferential facilities have been comprehensively documented (1). These were adopted for Los Angeles and have minor adjustments that reflect area characteristics.

Freeway preferential treatments include reserved freeway lanes in both normal and opposite (contraflow) traffic directions and freeway ramp metering on bypass lanes. Arterial treatments include with-flow or contraflow curb and median lanes, which in several instances used overhead, reversible-lane controls. A series of park-and-ride facilities were proposed since such facilities would be necessary in the Los Angeles area to provide collection points for an expanded express bus system.

Both transit buses and car pools would be permitted to use normal-flow freeway preferential lanes and bypass lanes with ramp metering, and only transit buses would be allowed to travel on reserved arterial lanes and contraflow freeway lanes.

TRAVEL CORRIDOR CHARACTERISTICS

Identification of major travel corridors for which preferential treatments are feasible was based on a number of travel and physical criteria. The criteria categories represent a simplified approach to short-range suburban transit planning, based on the identification of high-potential corridors through segmentation of the urban travel matrix. By this means, those corridors were identified in which adequate numbers of similar origin-destination trips are available to provide a diversion to high-occupancy vehicles that is sufficient to justify the implementation of preferential lanes.

Since the preferential facilities are primarily oriented to serving peak-period travel, work trips must form the basis for any diversion analyses to the facilities. The following work-trip-related categories are especially suited for identification of high-potential corridors:

1. Severe peak-hour corridor congestion,
2. Concentration of employment and activity centers,
3. Availability or potential for residential collector facilities,
4. High intensity of work trips in the corridor,

5. Potential for intermediate-range travel growth, and
6. Concentrations of car pools and heavy use of existing transit service.

The criteria were analyzed in the order given above by (a) identifying a bottleneck criterion, high peak-hour corridor congestion, and by (b) identifying several high-volume travel criteria. Each criterion was used to further identify, refine, and segment the highly dispersed Los Angeles metropolitan travel market into sensible corridors.

Heavily traveled corridors that experience high congestion levels were identified. Each corridor was investigated to locate high-employment centers that could be served, and areas with lesser or more dispersed employment were eliminated from further investigation. Outlying residential service areas were selected that exhibited a satisfactory potential for sufficient diversion to transit. Those residential areas that were located too close to the destination, <5 to 8 miles (<8 to 13 km) (3), to permit an adequate time savings or that had too little population to demand relatively frequent and attractive service were assigned lower potential ratings.

For those origin-destination pairs remaining in a corridor, those with low zone-to-zone peak-hour travel were eliminated. A minimum diversion level sufficient to require two peak-hour bus runs between the outlying feeder run or park-and-ride area and the activity center was used to screen the origin-destination service area pairs. The potential for increased future travel between each of the origin-destination pairs was examined by using residential, employment, and travel projections based on regional growth forecasts. It was considered especially desirable to establish service in corridors for which the SCRTD was proposing a mass rapid transit service. Final emphasis was placed on the corridors that currently are heavily used by transit and car pools. SCRTD patronage studies and consultant field surveys of car occupancies provided the necessary input to establish relative corridor priorities.

Major peak-period travel corridors identified through this procedure were the Ventura-Hollywood, San Bernardino, Santa Ana, Santa Monica, San Diego, Long Beach, and Pasadena Freeways to downtown Los Angeles.

EVALUATION OF ALTERNATIVE PREFERENTIAL TREATMENTS

Specific major roadway facilities were selected for detailed investigation within each of the eight travel corridors that were identified as having the potential for preferential treatment of high-occupancy vehicles. Review of as-built construction plans and field reconnaissance of each roadway were used to establish which treatment types were physically possible. Data for traffic volume and speed were obtained to determine potential speed differentials afforded by particular treatments. After a preliminary review of the data for each roadway, those alternative treatment types appearing feasible from an operational standpoint were identified for detailed evaluation. Twenty-six major treatments on 16 different roadways were considered.

The high-occupancy vehicles assigned to use each preferential treatment consist of existing scheduled transit buses, existing car pools, and projected transit vehicles serving park-and-ride facilities. The two existing elements were determined from traffic and transit inventories, and 28 park-and-ride facilities were developed as collector areas for suburbia. Park-and-ride buses were determined by estimating diversion to transit in each service area and then calculating the number of buses necessary to serve the estimated demand. These vehicles were then assigned to the fastest route to the appropriate activity center destination.

Impacts

Evaluation of the preferential treatments required that a set of impact parameters be identified to facilitate the comparison of alternate treatments with the status quo.

First, the potential impacts of preferential treatment for high-occupancy vehicles were categorized by the groups or agencies that would be most directly affected by such treatments (Table 1). Individual impacts were then defined as either benefits or disbenefits received by the group or agency. Finally, one or more parameters that provide a quantitative measure of each impact were determined.

Most of these impacts can be measured in terms of the following variables:

1. Travel time savings to preferential vehicles,
2. Projected increases in peak-hour transit patronage,
3. Peak-hour person-trip movements,
4. Peak-hour vehicle miles (vehicle kilometers) of travel,
5. Peak-hour person minutes of travel, and
6. Estimated capital and operating costs.

These measures, as well as the operational safety of the facility, were evaluated for each facility.

Travel Time Savings to Preferential Vehicles

An estimate of the anticipated travel time savings experienced by high-occupancy vehicles was developed for each of the alternate preferential treatment plans on each facility. Present automobile and transit travel times were determined from data supplied by the California Department of Transportation and the SCRTD. These data were supplemented with actual peak-period travel time runs.

Preferential vehicle travel times (for buses serving the park-and-ride system) were determined by estimating the time required to complete each segment of a theoretical trip from the front door to the park-and-ride lot, to the freeway, and to the activity center destination. Preferential travel time was estimated from each park-and-ride facility to the activity centers served by it.

The travel time for each of the 28 park-and-ride service areas to the major activity centers, based on the various preferential treatments, was compared with existing times. In several instances, the preferential travel time savings is negative. This occurs when the time savings resulting from preferential treatment is not sufficient to offset the additional time required to travel to the park-and-ride facility and wait for a bus.

Projected Peak-Hour Patronage

Magnitude of existing home-to-work travel desires between each park-and-ride service area and the major activity centers was determined through an analysis of the 1967 home interview survey data of the Los Angeles Regional Transportation Study (LARTS), which was supplemented with 1970 census home-to-work data.

A marginal utility model, for Los Angeles (3), was used to estimate the patronage that would be expected to use each park-and-ride facility if preferential treatment for buses was provided. This model translates transit travel time and cost savings between the service area and the activity center into a percentage of the diversion of the work-trip travel to transit.

Travel times developed in the preceding step and the home-to-work data were used to estimate peak-period patronage from each park-and-ride service area to the major activity centers. In Los Angeles, approximately 55 to 65 percent of all peak-period morning work trips occur in the peak hour. Thus, peak-hour patronage was estimated as 60 percent of total peak-period patronage. Peak-hour bus assignments to each park-and-ride site were designed to accommodate the estimated peak-hour patronage with an 80 percent load factor. Service between a specific park-and-ride facility and an activity center was not considered if less than three buses were required to serve the estimated peak-hour demand.

Peak-Hour Person-Trip Movements

Peak-hour person-trip movements on each facility were analyzed with and without preferential treatment. Peak-hour traffic count and automobile occupancy data were compiled to determine the existing peak-hour person-trip movements via bus, car pool, and low-occupancy vehicles for each facility. The same analysis was again performed for each facility with the proposed alternate preferential treatment plans by taking into account the projected peak-hour bus volumes assigned to that facility and the associated diversion of existing automobile travelers to the park-and-ride, preferential lane system.

The provision of preferential treatment significantly increased the estimate of peak-hour person-trip use of the lane designated for buses and car pools relative to the peak-hour person-trip volumes in the adjacent nonpreferential lanes.

Peak-Hour Vehicle Miles (Vehicle Kilometers) and Person Minutes of Travel

Peak-hour vehicle miles (vehicle kilometers) and person minutes of travel were also determined for buses, car pools, and nonpreferential vehicles for each of the alternate preferential treatment plans. The implementation of preferential treatment reduces total vehicle miles (vehicle kilometers) of travel and the person minutes of travel by persons using the preferential lanes. At the same time, the person minutes of travel for nonpreferential lane users may increase because of increased traffic densities, and, for several alternatives, this increase offsets the person-minute savings to preferential lane users.

Operations and Safety

Operational considerations were analyzed with regard to safety for both preferential and nonpreferential traffic. When priority treatments are implemented, the character of existing traffic will be altered by varying degrees. This alteration in traffic character is precipitated by two somewhat opposing factors—reduced total numbers of vehicles through person-trip diversion to transit and car pools and increased lane densities for nonpreferential traffic. The extent to which this alteration is beneficial or detrimental to operating conditions is examined for each priority treatment, and the qualitative assessment of the safety impact is expressed as one of five levels ranging from a major increase to a major decrease in accident potential.

The analysis of nonpreferential traffic was embodied in the ramifications of increased or decreased vehicular volumes, i.e., change in traffic flow, increase or reduction in lane changing, and change in ramp volumes. The analysis of preferential traffic confined itself to considerations of speed differentials between preferential and nonpreferential traffic, weaving at the preferential lanes' initial and terminal points, and incidents in the preferential lane.

Cost

Capital and operating costs were estimated for each of the alternative treatment plans. For normal items, cost estimates were determined primarily by using per-mile (per-kilometer) unit costs for different cost categories. For unusual construction problems, more detailed cost estimates were made.

Selection of Alternative Treatments

For each alternative treatment on each facility, the six impact evaluation parameters were determined as previously described. A summary of the parameters for each of the major preferential treatments is given in Table 2. This summary provides a planning basis for selecting the alternative preferential treatment plan that is best suited to each facility. The comparisons also provide a means of determining those facilities that provide the greatest benefits with the lowest costs and least disruption to traffic. In this manner, priorities are also determined for the preferential lane treatments.

A reduction in the total vehicle miles (vehicle kilometers) of travel can be directly associated with a reduction in fuel consumption and lower levels of total vehicle exhaust emissions. Reductions in the total person minutes and total vehicle miles (vehicle kilometers) of travel and no decrease in the total person trips accommodated by the travel corridor indicate that the person-carrying capacity of the corridor has been used more effectively. Thus, both of these impact criteria offer a measure of the relative efficiency of the transportation system before and after the implementation of a preferential treatment.

When preferential treatment is implemented, the number of persons and vehicles using the preferential lanes should increase from those using the lane under existing mixed traffic conditions. An increase in person-trip use of the preferential lane for a facility may also result in increased travel speeds for nonpreferential traffic.

Estimated capital and operating costs for each facility provide a cost measure to be weighed against the potential benefits offered by each preferential treatment plan.

Regional Ramp Metering

Ramp metering on a bus- and car-pool bypass can be effective for providing preferential treatment to high-occupancy vehicles. A regionwide application of preferential ramp control may, however, have several inherent disadvantages.

Preferential ramp control will affect specific groups of motorists more than others. Motorists living close to a freeway with sustained traffic volumes will be metered off the freeway or experience substantial delays in entering the freeway. Motorists living adjacent to a freeway in an outlying lower demand area will have significantly greater freeway access. Generally, long-distance automobile trips are encouraged because when the drivers are on the freeway they will experience little or no delay. Short-distance trips will be rerouted to the arterial street system or will experience the necessary delay on the freeway ramp approach.

Preferential Lane Versus Ramp Metering

The preferential lane concept is designed to divert long, low-occupancy vehicle trips to either transit or car pools, and the ramp-metering concept provides no substantial impetus to discourage low-occupancy automobiles and would encourage increased low-density urban expansion. No significant incentive is provided to divert long-distance trips to high-occupancy vehicles. Long-distance trips would be most easily converted to transit and car pools because the park-and-ride access and wait time or the car-pool circulation and pickup time is a small portion of the total trip travel time. Ramp metering on bypass lanes with high-occupancy vehicles would provide a disincentive to short-distance, low-occupancy trips, although these trips are least likely to divert to high-occupancy vehicles and are more likely to use arterial street alternative routes.

Considering the above, the potential diversion to high-occupancy vehicles induced by a comprehensive system of preferential ramp metering would be significantly less than that offered by a park-and-ride, preferential lane system.

RECOMMENDED PLAN

The preferential treatment plan developed for high-occupancy vehicles was intended to

Table 1. Preferential treatment impacts.

Item	Benefits	Disbenefits	Quantitative Measure of Impact
Preferential bus and car-pool users	Travel time savings Travel cost savings Improved reliability in arrival time Relaxation	Schedule conformance Loss of personal vehicle for use during midday to those diverted to buses	Travel time savings Duration and frequency of proposed transit service
Nonusers of low-occupancy vehicle	Possible improvements in traffic conditions Possibility of a viable alternative to low-occupancy vehicle use	Possible increase in travel delays, travel costs, and accident potential Reduced reliability of arrival time	Level of service Accident rates
Freeway and highway operations	Possible increases in roadway capacity through addition of new lanes and in person-trip throughput of the facility Possible improvements on existing travel lanes	Possible increase in nonpreferential congestion Additional equipment and personnel to maintain and operate preferential facilities Increased enforcement costs	Increased occupancy Level of service Operation and enforcement costs
Transit operators	Increased patronage Marketing advantage for transit in travel time savings and visibility	Higher operative and capital costs Less use due to peaking and deadheading	Patronage Capital and operating costs Required frequency and duration of proposed transit service
Community environmental energy impact	Reduced vehicle miles (vehicle kilometers) of travel per person	Start-up vehicle exhaust emissions[a] generated in traveling to a park-and-ride site	Vehicle miles (vehicle kilometers) of travel Person minutes of travel Fuel consumption

Note: 1 vehicle mile = 1.6 vehicle km.

[a]These are a high proportion of total-trip exhaust emissions.

Table 2. Summary of preferential treatment evaluation.

Region and Roadway	Treatment	Peak-Hour Travel: Vehicle Mile Reduction	Peak-Hour Travel: Person Minute Reduction	Peak-Hour Travel: Preferential Lane Use (persons/hour)	Estimated Annual Treatment Costs ($): Capital	Estimated Annual Treatment Costs ($): Operating	Accident Potential
San Fernando Valley							
San Diego Freeway	Normal flow	15,710	14,800	800	340,000	68,000	Minor increase
	Normal flow in shoulder lane	15,710	42,690	—[a]	3,010,000	520,000	No change
Hollywood Freeway	Normal flow	26,240	24,820	2,490	460,000	81,000	Minor increase
	Contraflow	26,240	26,880	—[a]	1,880,000	1,040,000	Minor increase
Ventura Freeway	Normal flow	3,990	-4,070	-80	290,000	86,000	Major increase
La Brea Avenue	Reversible lanes	—[a]	1,800[b]	590	325,000	57,000	Minor decrease
San Gabriel Valley							
San Bernardino Freeway	Normal flow	13,630	24,830	1,570	992,200	113,000	Minor increase
Pasadena Freeway	Contraflow	4,600	20,790	—[a]	590,000	710,000	Minor increase
North Broadway	Reversible lanes	—[a]	2,500[b]	850	165,000	25,000	Minor increase
West Los Angeles-Santa Monica							
Santa Monica Freeway	Normal flow	11,580	-7,720	-860	330,000	92,000	Major increase
	Normal flow in shoulder lane	11,580	25,590	—[a]	2,045,000	376,000	Minor decrease
Wilshire Boulevard	Contraflow	—[a]	30,000[b]	1,280	1,192,000	144,000	No change
Pico Boulevard	Reversible lanes	—[a]	3,200[b]	1,020	620,000	75,000	Minor decrease
South Bay							
Long Beach Freeway	Normal flow	37,400	25,350	1,900	409,000	100,000	Minor increase
	Normal flow in shoulder lane	37,400	80,440	—[a]	3,204,000	562,000	Minor decrease
Harbor Freeway	Normal flow	15,360	12,380	340	400,000	99,000	Major increase
	Contraflow	15,360	12,160	—[a]	469,000	2,092,000	Major increase
San Diego Freeway	Normal flow	40,800	13,440	340	988,000	172,000	No change
	Normal flow in shoulder lane	40,800	73,780	—[a]	7,721,000	1,285,000	Minor decrease
Flower Street	Reversible lanes	—[a]	4,600	2,470	390,000	56,000	Minor decrease
Orange County							
Santa Ana Freeway	Normal flow	35,440	85,330	340	949,000	157,000	Major increase
Artesia Freeway	Normal flow	20,490	6,120	120	625,000	115,000	Major increase
	Normal flow in shoulder lane	20,490	11,990	—[a]	1,350,000	310,000	Minor decrease
San Diego Freeway	Normal flow	16,700	17,670	50	546,000	109,000	No change
	Normal flow in shoulder lane	16,700	52,520	—[a]	4,267,000	818,000	Minor decrease
Whittier Boulevard	Reversible lanes	—[a]	5,600[b]	165	435,000	65,000	Minor increase

Note: 1 vehicle mile = 1.6 vehicle km.

[a]Not applicable.

[b]For transit passengers only.

promote increased car-pool and transit use to assist the area in attaining regional goals involving air quality, energy consumption, and maximum use of existing travel facilities. The plan is based on the comprehensive analysis of the alternative treatment plans in each corridor and includes a careful assessment of resulting transit service and traffic impact.

The plan includes 28 park-and-ride facilities, preferential lane treatments for 8 freeways and 6 arterials, and a downtown distribution plan. These facilities would vastly improve current transit service levels and would provide increased stimulus for use of buses and car pools.

Park-and-Ride Locations

Extensive areas of single-family housing units and dispersed residential areas such as those in Los Angeles are usually characterized by ineffectual transit service and low ridership. To offset these features, a series of 28 park-and-ride collection points are proposed for the area (Figure 1). These facilities were located as far away from the activity center destinations as feasible to provide preferential transit service for as great a part of the travel route as practical. Required sizes of the park-and-ride facilities range from 300 to 1,300 parking spaces to accommodate the estimated demands.

Preferential Facilities Plan

Preferential lane treatments for high-occupancy vehicles were recommended for all of the major regional sections of the SCRTD service area. The extent and type of recommended treatment for each of the 8 freeways and 6 arterials are shown in Figure 2. These treatments include the following:

1. Hollywood Freeway—a 5-mile (8-km) normal-flow lane;
2. San Diego Freeway—a 31-mile (50-km) preferential lane on the shoulders;
3. San Bernardino Freeway—a 5-mile (8-km) normal-flow lane;
4. Long Beach Freeway—an 11-mile (18-km) normal-flow lane on the improved shoulder;
5. Artesia Freeway—an 8-mile (13-km) normal-flow lane on the improved shoulder;
6. Santa Monica Freeway—an 8-mile (13-km) normal-flow lane on the improved shoulder;
7. Harbor Freeway—8 miles (13 km) of normal flow in the existing lane;
8. Ventura Freeway—3 miles (4.8 km) of normal flow in the existing lane;
9. Wilshire Boulevard—4 miles (6.4 km) of contraflow median lanes;
10. La Brea Avenue—a 2-mile (3.2-km) bus-priority, reversible lane;
11. Flower Street—a 2-mile (3.2-km) bus-priority, reversible lane;
12. Whittier Boulevard—a 2.5-mile (4-km) bus-priority, reversible lane;
13. North Broadway—a 1-mile (1.6-km) bus-priority, reversible lane; and
14. Pico Boulevard—a 2.5-mile (4-km) bus-priority, reversible lane.

Projected evening peak-hour use of the facilities is shown in Figure 3. Maximum use is projected for the Hollywood Freeway south of the Ventura Freeway. Peak-hour lane use on that facility totals 102 buses and 400 car pools for 5,400 person trips.

Weekday use of all 14 preferential lane treatments would total 2,700 bus trips and 7,000 car-pool trips. These vehicles would accommodate a total of 135,000 daily person trips. Annual travel distance and time savings associated with the preferential lanes are estimated at 180,000,000 vehicle miles (289 700 000 vehicle km) and 6,100,000 person hours. The projected preferential lane use approximates 2 percent of total travel during peak periods.

Figure 1. Proposed park-and-ride locations.

Figure 2. Preferential lane treatment.

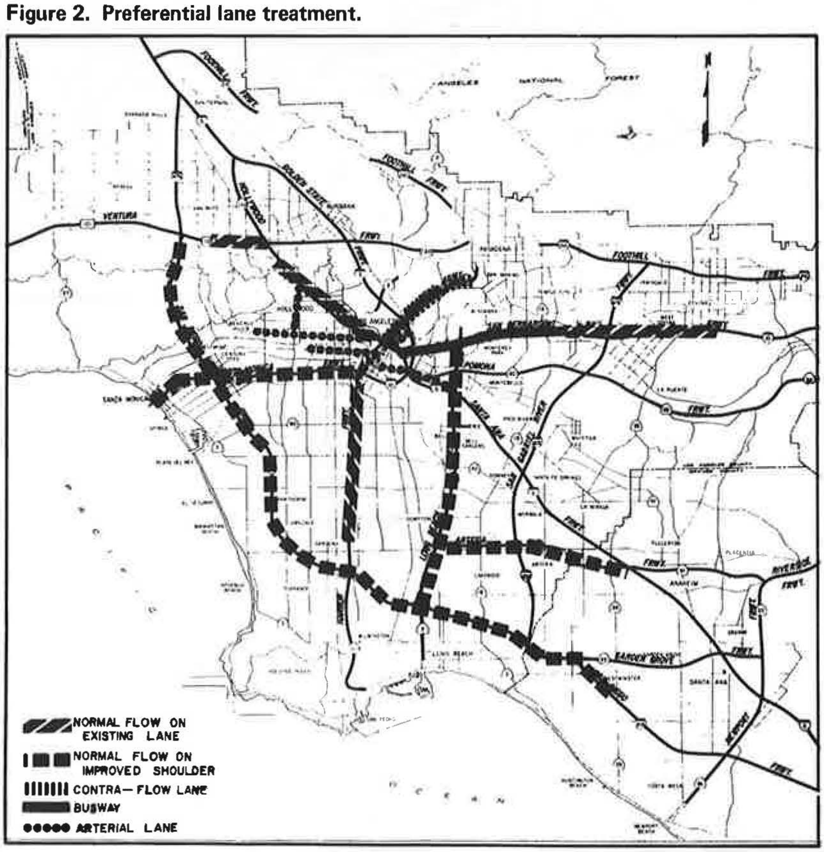
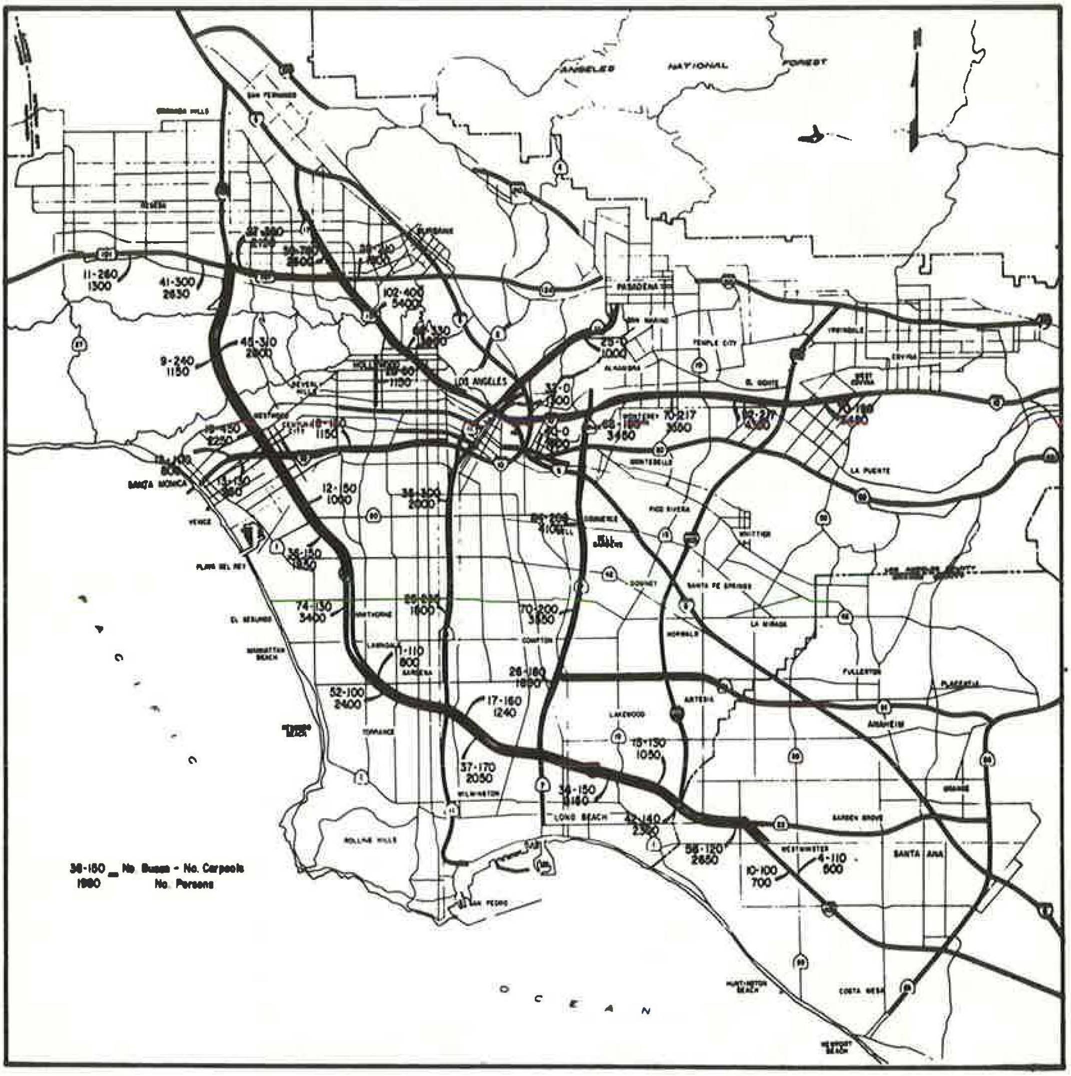


Figure 3. Preferential lane use, p.m. peak hour.



Distribution in Downtown Los Angeles

Routing and operation of transit buses on the approach to and circulation within the Los Angeles downtown area, the largest single activity center, are essential components in the overall regional program. This is especially true because of the large number of additional buses (150 to 200) that would enter and exit downtown Los Angeles during the morning and afternoon peak traffic hours.

In 1973, a bus-priority lane (4) was adopted for the downtown distribution routes of express buses from the Los Angeles-El Monte Busway. The plan includes contraflow bus lanes on two one-way couples, one on the east side to serve the older commercial areas and one on the west side to improve service to the fast-growing financial district. Los Angeles presently has a contraflow southbound bus lane on 10 blocks of Spring Street on the east side of the downtown area.

Distribution and loading of express buses on the east side of downtown would use Spring Street to take advantage of the contraflow bus lane. On the west side, Flower Street would be used as the distribution route through the financial district since the proposed bus-priority, reversible-lane system could be used between the freeway loop and the south limit of the intensely developed core area.

Priorities

A determination of priority groups is necessary to implement a preferential facility treatment program as extensive as that developed in this study. Such scheduling groups were outlined to allow certain treatment types that have not been previously used in the Los Angeles area to be tested under actual traffic conditions before further sections were implemented. The experience and results gained from the operation of the initial project of normal-flow bus and car-pool freeway lanes, median contraflow bus lanes, and bus-priority, reversible-lane systems will assist in the implementation and operation of subsequent projects using similar treatment types.

Program Cost

Capital costs to implement the proposed preferential lane treatments are estimated to be $27,490,000. Annual costs of $5,392,000 will be necessary to maintain and operate these treatments. Acquisition and improvements of the 28 park-and-ride facilities will require $8,480,000, and annual operating expenses are estimated to be $1,424,000.

Total annual capital and operating costs for the proposed additional transit services are estimated to be $18,693,000. This estimate includes $1,193,000 in annual capital cost expenditures for acquisition of the proposed 485 new buses and their support facilities and $17,440,000 for annual operating costs.

PLAN IMPLEMENTATION

Implementation of a portion of the proposed program for preferential facilities has been initiated by the California DOT and SCRTD. At present, eight park-and-ride facilities have been opened for service in addition to the El Monte facility, which had been constructed prior to the study. In February 1975, a tenth facility will be served by SCRTD.

The California DOT is preparing to implement normal-flow preferential lanes on the Santa Monica Freeway and contraflow lanes on the Hollywood Freeway. The two initial facilities, in addition to the Los Angeles-El Monte Busway, will provide the Los Angeles region with observation and testing of three types of preferential lane facilities. After satisfactory operations have taken place on these, similar facilities will be initiated in other major travel corridors.

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